

WITHOUT COMPROMISE

May 13, 2015

Ms. Michelle Kaysen USEPA Region 5, Mail Code LU-9J 77 West Jackson Boulevard Chicago, IL 60604

COLL COMMUNITY Engagement Framework, Hartford Petroleum Release Site, Hartford, Illinois Valles RE:

Dear Ms. Kaysen:

On behalf of Apex Oil Company, Inc. (Apex), Trihydro Corporation (Trihydro) is submitting this framework describing community engagement activities planned at the Hartford Petroleum Release Site (Hartford Site) over the coming year. During a meeting with the United States Environmental Protection Agency (USEPA) and Illinois EPA on October 9, 2014, it was identified that community engagement activities would transfer from the USEPA Comprehensive Environmental Response Compensation and Liability Act (CERCLA) program managers to Apex. In order to facilitate this transition, the Agencies requested that a framework for the community engagement program be developed by Apex, which is included in the bullets that follow:

- A community outreach coordinator, McKillip and Associates, will be introduced as the primary lead for community engagement activities. Along with the Agencies, McKillip and Associates will serve as an immediate contact for any stakeholder concerns regarding remediation activities and monitoring results.
- Routine meetings will continue to be conducted with the Village of Hartford to ensure that the Village representatives and public service departments have all the information necessary to understand the interim remediation and pilot test activities being performed to define a final multiphase remedy. Apex will also meet regularly with public officials outside of these routine meetings to answer any questions or concerns.
- Apex will continue to support development of fact sheets and public meetings, which includes collaboration with the USEPA and Illinois EPA site managers and community liaisons, preparation of written and visual content, as well as assistance in distribution of fact sheets, meeting notices, and other information as requested by the USEPA and Illinois EPA.
- Apex and the regulatory agencies in dialogue on issues of concern with respect to cleanup of the Hartford Site. The focus group hopefully will reflect the diversity of stakeholder interests across the Village of Hartford

 Ciacinneti Office | 2702 East Kemper Food | Cincinnation



Ms. Kaysen and Mr. Turner May 13, 2015 Page 2

- The objectives of the focus group will be identification of communication needs and defining the future direction for community engagement at the Hartford Site.
- Possible outgrowth from the focus group could include establishment of a community action panel, routine public meetings, fact sheets, individual meetings with stakeholders, as well as other options.
- Apex will identify potential focus group members, facilitate meetings, address member concerns, maintain correspondence, and provide meeting notes to the focus group members.
- The outcomes of the focus group meetings will be summarized in an evaluation, developed in cooperation with the focus group members, which will describe the options considered and approach selected for future community engagement activities. This evaluation will also define the measures that will be used to determine the effectiveness of future community engagement activities as well as a process for continued improvements.

If you have questions regarding this framework for community engagement activities described herein, please contact Paul Michalski at (513) 429-7452.

Sincerely,

Trihydro Corporation

Paul Michalski, P.G.

Team Leader

24S-007-001

cc: James F. Sanders, Apex Oil Company, Inc.

Tom Miller, Illinois Environmental Protection Agency
Chris Cahnovsky, Illinois Environmental Protection Agency
Mara McGinnis, Illinois Environmental Protection Agency

Monte McKillip, McKillip and Associates

1190505040

Hartford/HartfordFree Hydrocarbon Compliance File Tribula

CELEBRATING

May 13, 2015

Ms. Michelle Kaysen USEPA Region 5, Mail Code LU-9J 77 West Jackson Boulevard Chicago, IL 60604

COLLINS VILLE OFFICE

RE: First Quarter 2015 Sentinel Well Monitoring Summary Report, Hartford Petroleum Release Site, Hartford, Illinois

Dear Ms. Kaysen,

Trihydro Corporation (Trihydro) has prepared the following letter report describing groundwater monitoring activities conducted by Apex Oil Company, Inc. (Apex) for the five sentinel groundwater monitoring wells located at the Hartford Petroleum Release Site (Hartford Site). On September 18, 2014, the United States Environmental Protection Agency (USEPA) sent Apex and the Hartford Working Group a letter describing reassignment of activities at the Hartford Site, which included Apex resuming groundwater monitoring within the sentinel well network beginning in the first quarter 2015. Monitoring activities were performed by Apex on January 29, 2015. A representative from the Hartford Working Group accompanied Apex during the first quarter 2015 monitoring event.

BACKGROUND

The five sentinel wells (HMW-25 through HMW-29) were installed in 2003 to provide an early indication of petroleum hydrocarbon migration towards the well head protection area for the Hartford drinking water well field (McGuire et al. 2001). As shown on Figure 1, the well head protection area is located approximately 600 feet to the southwest of petroleum hydrocarbons present in soil and groundwater attributed to historical releases from the refineries and petroleum storage facilities situated to the north and east of the Village of Hartford. The sentinel groundwater monitoring wells are located between the well head protection area and the distribution of petroleum hydrocarbons beneath the Hartford Site.

The Village of Hartford drinking water wells are screened within deeper portions of the Main Sand stratum because of the high groundwater transmissivity within this aquifer. The two most recently installed groundwater production wells (No. 3 and No. 4) were installed by the Village of Hartford to a total depth of approximately 105 ft-bgs and were constructed with between 20 and 35 feet of screen.

In the absence of groundwater pumping (rates exceed 10,000 gallons per minute) by the various facilities around the Hartford Site (e.g., British Petroleum, Phillips 66, Premcor, etc.) groundwater flow within the Main Sand under typical river stage conditions may flow to the south and southwest, parallel to surface water flow within the Mississippi River (USEPA 2010). However, natural flow of groundwater in the Main Sand aquifer has been altered beneath the Village of Hartford such that during periods of high river stage groundwater flow is generally towards the east to northeast due to recharge from the river and banks



Ms. Michelle Kaysen May 13, 2015 Page 2

storage within the Main Sand. During moderate river elevations, the groundwater flow direction is northward and during low river stages, groundwater flow trends westerly to northwesterly.

GROUNDWATER ELEVATIONS

The depth to groundwater within the sentinel wells is measured quarterly as part of the site-wide fluid level gauging event performed at the Hartford Site. In addition, the depth to water is gauged immediately prior to purging and groundwater sample collection. The depth to groundwater was measured using a SolonistTM water level indicator, decontaminated prior to and immediately following gauging within each sentinel well. The water level indicator is decontaminated using isopropyl alcohol in accordance with Hartford Working Group Standard Operating Procedure No. 05 (Equipment Decontamination). The depth to groundwater measurements were made from the pre-marked (surveyed) measuring point on the north side of the well casing. Fluid level measurements were recorded on digital field forms using Trihydro's environmental information management system.

Table 1 summarizes the depth to water measurements and groundwater elevations measured within the sentinel wells from April 2013 through March 2015. As shown on Figure 2, groundwater flow during the first quarter 2015 was generally to the west and northwest and is attributed to the low water table combined with the high rate of pumping conducted within production wells on the Phillips 66 River Dock. There is also a small area of the Hartford Site along North Olive Street between East Date and East Watkins Streets, where ground flow was locally influenced in March 2015 by pumping within Area A and on the Premcor facility.

GROUNDWATER SAMPLING PROCEDURES

Groundwater was purged and samples collected using a low-flow (minimal drawdown) groundwater sampling methodology (Puls and Barcelona 1996). A ProActiveTM Monsoon® submersible pump with a flow controller and dedicated low-density polyethylene (LDPE) tubing was utilized for purging and sample collection. The pumps were installed so that the intake was located approximately five feet below the saturated portion of the screened interval. The flow rate was maintained between 0.1 and 0.5 liters per minute to minimize drawdown and to avoid undue pressure, temperature, or other physical disturbances to groundwater over the sampling interval.

Prior to purging each sentinel well, the submersible pump was decontaminated in the following manner:

- External surfaces were brushed free of loose material, washed with a phosphate free decontamination solution and potable water, and rinsed with deionized or distilled water.
- Internal surfaces were cleaned by placing the pump in a 5-gallon bucket containing a phosphate-free decontamination solution and allowing the pump to operate for several minutes to circulate the

printed 07/21/2016 2:07PM by Dave.Gambach p. 5/15



Ms. Michelle Kaysen May 13, 2015 Page 3

decontamination solution through the impellers and pump housing. The pump was then rinsed by circulating with potable water, followed by a distilled water rinse.

Decontamination fluids and purge water were collected and disposed of in accordance with state and federal regulations.

Field Analyses

Field parameters (including specific conductivity, pH, temperature, dissolved oxygen, oxygen reduction potential, and turbidity) were measured using a HoribaTM U-53G® multi-parameter meter over five-minute intervals during purging to ensure a representative groundwater sample was collected. The multi-parameter water quality meters were calibrated daily, in accordance with the manufacturer's guidelines, using a factory-prepared calibration standard. In general, the following stabilization criteria were achieved over three successive readings before collecting groundwater samples:

Temperature: ± 3%

• $pH: \pm 0.1$

Specific Conductance: ± 3%

DO: ± 10% or <10 nephelometric turbidity units

ORP: ± 0.3 milligrams per liter

Turbidity: ± 10 millivolts

Sample Collection and Analyses

Once the stabilization criteria were achieved, groundwater samples were collected in 40-milliliter glass vials preserved with hydrochloric acid and immediately placed in a cooler with ice. Groundwater samples were carefully filled during sample collection to minimize headspace and agitation. A blind duplicate sample was collected from monitoring well HMW-025 during the first quarter 2015 monitoring event. The lids on each sample container were tightly secured. The sample labels and chain of custody were filled out completely including sample identification, date and time of collection, project name, client name, field personnel initials, requested analyses, and preservation methods.

The samples were collected and analyzed in general accordance with the Test Methods for Evaluating Solid Waste (U.S. EPA 1997). The groundwater samples collected from the sentinel wells (along with groundwater samples collected from the monitoring wells Area A) were transported to TekLab, Inc. located in Collinsville, Illinois for analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE) via USEPA Method 8260B.



Ms. Michelle Kaysen May 13, 2015 Page 4

GROUNDWATER ANALYTICAL RESULTS

A summary of the groundwater analytical results are provided in Table 2. The laboratory analytical results and data validation review are included in Attachment A. The laboratory analytical results were validated in accordance with the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2014) with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review (USEPA 1999). Review of field duplicates was conducted according to the USEPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures (USEPA 2013). Overall the analytical results were acceptable as reported by the laboratory, although J-qualifiers indicating estimated concentrations were associated with detections of ethylbenzene and total xylenes as summarized in Attachment A and Table 2.

In general, concentrations of BTEX and MTBE were below the reporting limit within the groundwater samples collected from the sentinel wells during the first quarter 2015, with the following exceptions:

- Benzene was measured in the groundwater sample collected from sentinel well HMW-025 at a concentration of 2.8 micrograms per liter (μg/L), which is below the Illinois EPA Tier 1, Class 1 Groundwater Remediation Objective (35 Illinois Administrative Code 742) for benzene (5 μg/L). Benzene was not detected above the reporting limit in the duplicate sample collected from well HMW-025.
- Ethylbenzene was estimated at the reporting limit in the sample collected from sentinel well HMW-026 (1.0 μg/L) and slightly above the reporting limit in the groundwater sample collected from sentinel well HMW-025 (1.6 μg/L). The detected results are several orders of magnitude below the Illinois EPA Tier 1, Class 1 Groundwater Remediation Objective (35 Illinois Administrative Code 742) for ethylbenzene (700 μg/L). Ethylbenzene was not detected above the reporting limit in the duplicate sample collected from well HMW-025.
- Total xylenes were estimated to be present in each of the groundwater samples collected from the sentinel monitoring wells. Concentrations were estimated between 1.4 μg/L and 5.4 μg/L, several orders of magnitude below the Illinois EPA Tier 1, Class 1 Groundwater Remediation Objective (35 Illinois Administrative Code 742) for total xylenes (10,000 μg/L).

As shown on Figure 2, groundwater flow during the first quarter 2015 was to the west and northwest. Therefore, the sentinel monitoring wells were situated up-gradient of light non-aqueous phase liquids and dissolved phase petroleum hydrocarbons attributed to the Hartford Site and down-gradient from the well head protection area for the Hartford drinking water well field. Therefore, detections of benzene, ethylbenzene, and xylenes in the groundwater samples collected in the sentinel wells are not attributed to migration of dissolved phase petroleum hydrocarbons from the Hartford Site.



Ms. Michelle Kaysen May 13, 2015 Page 5

It should be noted that samples collected from the sentinel monitoring wells in January 2015 were shipped and analyzed with groundwater samples collected from monitoring wells located in Area A. The groundwater samples collected from the Area A wells contained elevated concentrations of benzene, ethylbenzene, and total xylenes. Following receipt of the analytical results from Teklab, Inc., Trihydro requested re-analysis of the groundwater samples from the sentinel monitoring wells. The laboratory analytical results for the re-analysis are included in Attachment B, and are consistent with the original results. It is possible that the volatile constituents present in the groundwater samples collected from the sentinel wells are attributed to cross contamination from the groundwater samples collected from the Area A monitoring wells. During future quarterly monitoring events, groundwater samples collected from the sentinel wells will be segregated and transported to the laboratory in a separate cooler from any other groundwater samples collected at the Hartford Site. If you have any questions regarding the first quarter 2015 sentinel well monitoring results, please contact me at (513) 429-7452.

Sincerely,

Trihydro Corporation

Paul Michalski, P.G.

Team Leader

24S-007-001

Attachments

cc: James F. Sanders, Apex Oil Company, Inc.

Kevin Turner, United States Environmental Protection Agency

Tom Miller, Illinois Environmental Protection Agency

Chris Cahnovsky, Illinois Environmental Protection Agency

inted 07/21/2016 2:07P	M by Dave.Gambach p. 8/15	5		
_				
-				
•				
•				
_				
_				
1				
				TABLES
_				
_				
-				
R				
=				
_				·
_				
1				
-				
1				
-				

ç

TABLE 1. SENTINEL WELL GAUGING RESULTS HARTFORD PETROLEUM RELEASE SITE, HARTFORD, ILLINOIS

Location	Date	Measuring Point Elevation	Depth to LNAPL	Depth to Water	LNAPL Thickness	Groundwater Elevation
		(ft-amsl)	(ft-bmp)	(ft-bmp)	(ft)	(ft-amsi)
HMW-025	4/2/13	427.45		27.48		399.97
	10/2/13		·	28.92		398.53
	1/16/14			30.78		396.67
	5/15/14		-	26.40	-	401.05
	8/5/14			24.14		403.31
	10/30/14			23.95	_	403.50
	1/29/15			30.19	_	397.26
	3/6/15			31.14		396.31
HMW-026	4/2/13	425.20		25.52	_	399.68
	10/2/13			25.06	-	400.14
	1/16/14			27.70		397.50
	5/15/14			24.70		400.50
	8/5/14			20.95		404.25
	10/30/14			21.25	_	403.95
	1/29/15			26.96	_	398.24
	3/6/15			NM	-	-
HMW-027	4/1/13	430.51		30.72		399.79
	10/2/13			30.00	_	400.51
	1/16/14			32.52	_	397.99
	5/15/14			29.83		400.68
	8/5/14			25.53		404.98
	10/30/14			26.20	_	404.31
	1/29/15			31.58	_	398.93
	3/5/15			32.62		397.89
HMW-028	4/1/13	430.97		30.42		400.55
	10/2/13		••	30.42		400.55
	1/16/14			32.61		398.36
	5/15/14			29.50	_	401.47
	8/5/14			26.26		404.71
	10/30/14			26.50		404.47
	1/29/15			31.62	_	399.35
	3/5/15		••	32.60	-	398.37
HMW-029	4/1/13	429.13		29.12		400.01
	10/2/13			28.20	_	400.93
	1/16/14		••	30.39		398.74
	5/15/14			28.77	_	400.36
	8/5/14			24.96	_	404.17
	10/30/14			25.09	<u> </u>	404.04
	1/29/15			29.47		399.66
	3/5/15			30.56	_	398.57

Notes:

ft - feet

ft-amsi - feet above mean sea ievel

ft-bmp - feet below measuring point

NM - not measured

TABLE 2. SENTINEL WELL GROUNDWATER ANALYTICAL RESULTS SUMMARY HARTFORD PETROLEUM RELEASE SITE, HARTFORD, ILLINOIS

Location	Date	Benzene (µg/L)	Ethylbenzene (µg/L)	MTBE (μg/L)	Toluene (µg/L)	m,p-Xylene (μg/L)	o-Xylene (µg/L)	Xylenes, Total (μg/L)
HMW-025	8/27/13	ND(1.0)	ND(1,0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-025	11/11/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-025	2/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-025	2/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-025	5/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-025	5/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-025	8/11/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND(5.0)	ND(10.0)
HMW-025	8/11/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND(5.0)	ND(10.0)
HMW-025	1/29/15	2.8	1.6	ND(2.0)	ND(1.0)	ND(5.0)	ND(5.0)	5.4 J
HMW-025 Dup	1/29/15	ND(2.0)	ND(1.0)	ND(2.0)	ND(1:0)	ND(5.0)	ND(5.0)	2.3 J
HMW-026	8/27/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-026	11/11/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-026	2/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-026	5/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10,0)
HMW-026	8/11/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND(5.0)	ND(10.0)
HMW-026	1/29/15	ND(2.0)	1.0 J	ND(2.0)	ND(1.0)	ND(5.0)	ND(5.0)	2.6 J
HMW-027	8/27/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-027	11/11/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-027	11/11/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-027	2/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-027	5/12/14	ND(1.0)	ND(1.0)	ND(1,0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-027	8/11/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND(5.0)	ND(10.0)
HMW-027	1/29/15	ND(2.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(5.0)	ND(5.0)	2.3 J
HMW-028	8/27/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-028	11/11/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-028	2/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-028	5/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-028	8/11/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND(5.0)	ND(10.0)
HMW-028	1/29/15	ND(2.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(5.0)	ND(5.0)	1.8 J
HMW-029	8/27/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-029	8/27/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10,0)	ND(5.0)	ND(10.0)
HMW-029	11/11/13	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-029	2/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-029	5/12/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(10.0)	ND(5.0)	ND(10.0)
HMW-029	8/11/14	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(5.0)	ND(5.0)	ND(10.0)
HMW-029	1/29/15	ND(2.0)	ND(1.0)	ND(2.0)	ND(1,0)	ND(5.0)	ND(5.0)	1.4 J
1 Class 1 GRO		5.0	700	70	1,000	NA NA	NA NA	10,000

Notes

¹Tier 1 Class 1 Groundwater Remediation Objectives from Illinois EPA's Tiered Approach to Corrective Action Objectives (35 IAC Part 742)

Dup - duplicate sample

MTBE - methyl tert-butyl ether

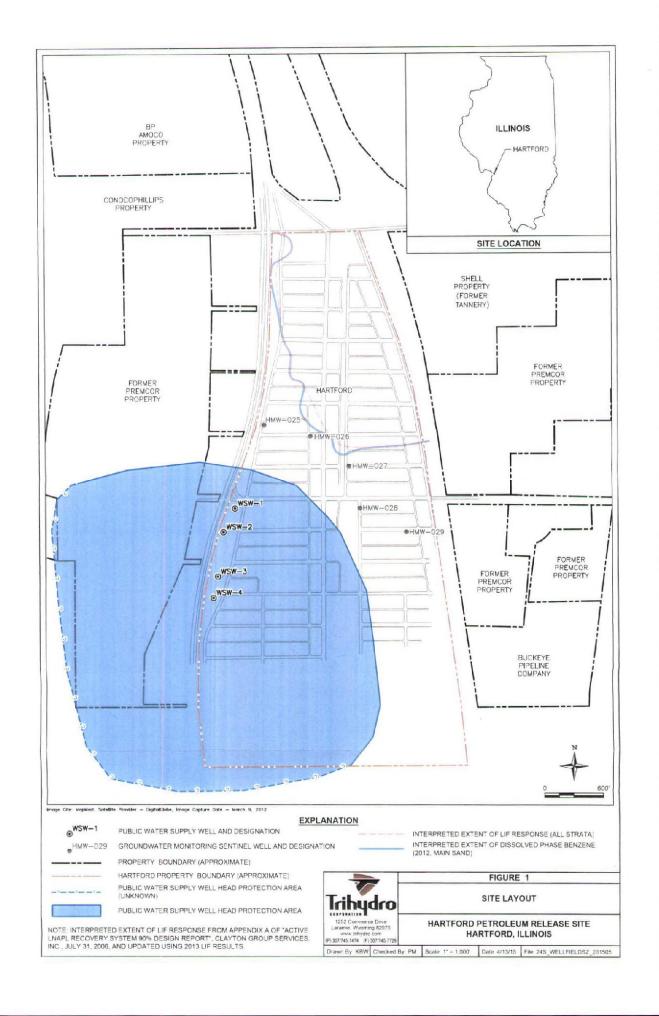
J - estimated concentration

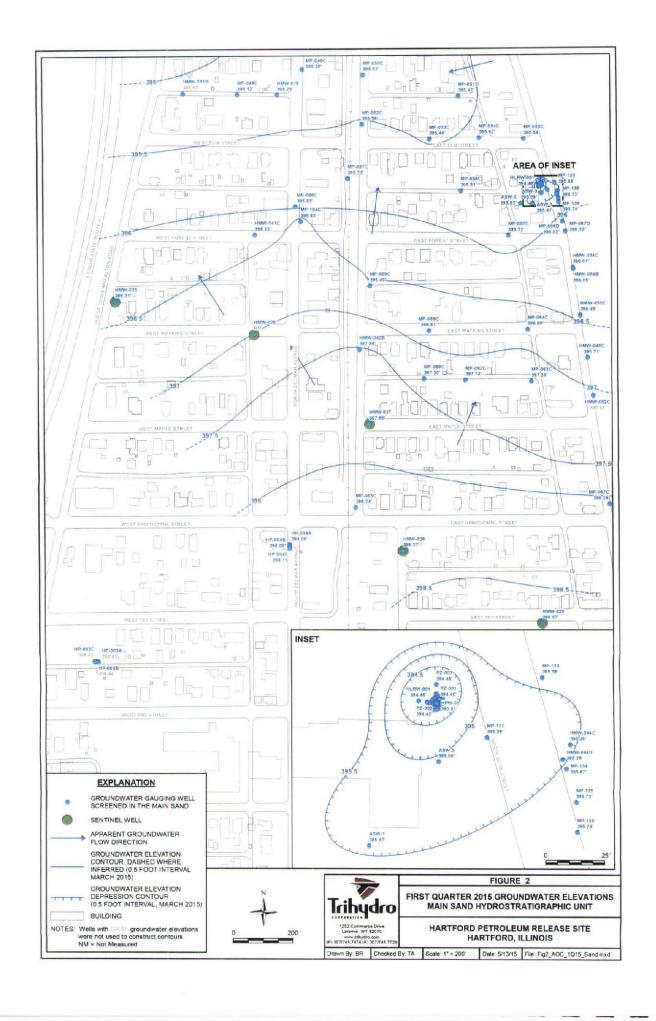
ND(1.0) - non detect at the indicated reporting limit

NA - not applicable

μg/L - micrograms per liter

1	
_	
	•
1	
•	
l .	
1	
I	
	EICHBEC
_	FIGURES
•	
•	
•	
1	
_	
•	





ATTACHMENT 1 (PLEASE SEE ATTACHED CD)

printed 07/21/2016 2:07PM by Dave.Gambach p. 14/15

BOL REFERENCE SHEET

Facility Number:	1190505040
Facility Name:	Hartford Free Hydrocarbon Pool
USEPA Number:	·
File Category:	08
The Category.	

CD

DATE OF DOCUMENT	DESCRIPTION OF DOCUMENT
5-15-2015	First quarter 2015 sentinel well report attachment:1 Hartford Petroleum Release Site. Hartford Illinois
	<u> </u>
	· -
300000	